



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,140	12/29/2000	Edward N. George	TI-31481	6785

7590

04/19/2004

Warren Franz
Texas Instruments Incorporated
P.O. Box 655474, MS 3999
Dallas, TX 75265

EXAMINER

TON, ANTHONY T

ART UNIT	PAPER NUMBER
----------	--------------

2661

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/750,140

Applicant(s)

GEORGE, EDWARD N.

Examiner

Anthony T Ton

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 14-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Actions

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "**GATEWAY PLATFORM-A**" has been used to designate both "Modem Relay Unit 3" and "Modem Relay Unit 9" in **Fig.1** and **Fig.2**.

Examiner suggests changing the "**GATEWAY PLATFORM-A**", which is corresponding to the "Modem Relay Unit 9", to "**GATEWAY PLATFORM-B**".

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Abstract

2. The abstract of the disclosure is objected to because the following informalities:

Examiner suggests changing term "**The modem** relay provides a local interface to **the modem** on both ends of a call" in line 3 to "**A modem** relay provides a local interface to **a modem** on both ends of a call" since both of modems are different to each other.

Correction is required. See MPEP § 608.01(b).

Claim Objections

3. **Claims 1, 2, 6 and 10** are objected to because of the following informalities:

a) **In Claim 1**: term "reduced bandwidth, and improved **resistence**" in lines 1-2 is not proper since misspelling for word "resistence", and the comma "," should not be used between characters "bandwidth" and "and";

Examiner suggests changing this term to "reduced **bandwidth and improved resistance**".

b) **In Claim 2**: term "**commination**" in line 1 is misspelling;

Examiner suggests changing this term to "**communication**".

c) **In Claim 6**: comma "," that is used between characters "network driver" and "to maintain" in line 5 is not proper;

Examiner suggests changing the term "**network driver, to maintain**" in line 5 to "**network driver to maintain**".

d) **In Claim 7**: comma "," that is used right after term "**equipment**" in line 8 should be replaced by a period "." to indicate the end of the claim.

Examiner suggests changing the term "**equipment,**" in line 8 to "**equipment.**"

f) **In Claim 10**: term "**and**" should be added after term "**a local interface;**" in line 5 to make the claim more clearly in formality.

Examiner suggests changing the term "**a local interface;**" in line 5 to "**a local interface; and**".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. **Claims 1-4** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) **Claim 1** recites the limitation "A system for transmitting modem across a packet network" in **line 1** is vague and indefinite since how could a "modem" (it's just a piece of communication hardware) be transmitted by a communication system across a packet network? Therefore, the limitation is indefinite.

b) **Claim 1** recites the limitation "**said first end**" in **line 14**. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-3, 5 and 7-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Verreault** (US Patent No. **6,434,169**) in view of **Sullivan et al** (US Patent No. **6,667,986**).

a) **In Regarding to Claim 1:** **Verreault** disclosed a system for transmitting modem signals across a communication network with reduced bandwidth and improved resistance to network packet loss (see Fig.4), comprising:

a first processor for connection between a first modem and a first side of said network (see Fig.5: V.32 BIS State Machine; Fig.6: DSP CALL; and col.5 lines 29-30: TM320C551 DSP) for:

providing a local interface to said first modem (see Fig.5: block of linear input buffers);

demodulating the full duplex data stream from said first modem into bits (see col.17 lines 44-52: full duplex exchange, demodulate);

packetizing the bits for transport over a network (see Fig.5: block packetizer); and

remodulating the data stream from a remote end (see Fig.5: block modulator; and see col.6 lines 54-55: data is modulated. In which, when a data packet is received from the far-side modem relay unit (the one that is on the right side of "data" in Fig.4), then the data packet is modulated (re-modulated) and sent to a local modem that connected to the first-end data device (the one that is on the leftmost in Fig.4)), and

a second processor for connection between a second modem and a second side of said network (see Fig.5: V.32 BIS State Machine; Fig.7: DSP ANS; and col.5 lines 29-30: TM320C551 DSP) for:

providing a local interface to said second modem (see Fig.5: block of linear input buffers);

demodulating the full duplex data stream from said second modem into bits (see col.17 lines 44-52: full duplex exchange, demodulate);

packetizing the bits for transport over a communication network (see Fig.5: block packetizer); and

remodulating the data stream from the first end (see Fig.5: block modulator; and see col.6 lines 54-55: data is modulated. In which, when a data packet is received from the original-side modem relay unit (the one that is on the left side of "data" in Fig.4), then the data packet is modulated (re-modulated) and sent to a local modem that connected to the far-end data device (the one that is on the rightmost in Fig.4)).

Verreault failed to explicitly disclose the communication network is a packet network. However, **Verreault** clearly disclosed packets that relate to a data network, in which, packets can be transmitted by a first-side modem relay unit across a data medium to a far-side modem relay unit as shown in Figs.4 and 5. Therefore, **it would be obvious** on the disclosure of **Verreault** related to this subject matter of the instant claim.

Sullivan et al clearly disclosed a packet network that is used to provide high speed data access using a distributed modem (see Figs1 and 5: block 20 (local modem) and block 40 (distributed modem – the modem relay unit as disclosed by the applicant) shown in Fig.1; and block 150 shown in Fig.5 represents for the packet data network as disclosed by the applicant).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide such a packet network by replacing the data medium of **Verreault** a packet network as taught by **Sullivan et al**, so that a voice can be sent across a packet network, **the motivation being** to support different data rates and save bandwidth.

b) In Regarding to Claim 2: Verreault further disclosed the system further comprising:

means for establishing optimal modulation and rate parameters for communication between said first and second modems (see Fig.5: blocks "Network RX Queues", "Rate Controller", and "Modem Controller & Sinodem Access"; and see Table 1 in col.6: Optimal Queue size of the modem controller).

It would have been obvious to combine Verreault and Sullivan et al for the same reason as in Claim 1.

c) In Regarding to Claim 3: Verreault further disclosed wherein said means for establishing optimal modulation and rate parameters includes the exchange of signaling messages to determine the best commonly supported data rate (see col.7 line 47-col8.line 6: signaling message; and see Claim 13 in col.54: data rates supported).

It would have been obvious to combine Verreault and Sullivan et al for the same reason as in Claim 1.

d) In Regarding to Claim 5: Verreault disclosed a system wherein an originating modem terminal equipment MTE connects to an intermediate digital network via an originating modem relay unit MRU and wherein a destination modem terminal equipment connects to the network via a destination modem relay unit (see Fig.4), a method of providing modem communications comprising:

the originating modem terminating equipment sending data to the destination modem terminating equipment via the originating modem relay unit and the destination modem relay unit (see Fig.4: Data Device on the left side sending data to destination

Art Unit: 2661

Data Device on the right via modem relay units locate on the left and right of the "data" medium);

the originating modem relay unit sending the data to the destination modem relay unit (see Fig.5: in which, demodulated data is packetized and sent to the destination modem relay unit throughout the block of network transmit); and

while the destination modem relay unit is waiting for data from the originating modem terminating equipment, the destination modem relay unit maintaining communication with the destination modem terminating equipment to prevent protocol timeouts of the destination modem terminating equipment (see col.2 line 63-col.3 line 3: its counterpart modem relay (destination relay unit) in order to negotiate compatible data transmission conditions; and see col.10 lines 1-9: performs the state sanity timeout verification).

Verreault failed to explicitly disclose the communication network is a digital network. However, **Verreault** clearly disclosed packets that relate to a data network, in which, packets can be transmitted by a first-side modem relay unit across a data medium to a far-side modem relay unit as shown in Figs.4 and 5. Therefore, **it would be obvious** on the disclosure of **Verreault** related to this subject matter of the instant claim.

Sullivan et al clearly disclosed a digital network that is used to provide high speed data access using a distributed modem (see Figs1 and 5: block 20 (local modem), block 40 (distributed modem – the modem relay unit as disclosed by the

Art Unit: 2661

applicant), and digital data path 16 shown in Fig.1; and block 150 shown in Fig.5 represents for the packet data network as disclosed by the applicant).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide such a digital network by replacing the data medium of **Verreault** a digital network as taught by **Sullivan** et al, so that a voice can be converted into digital and then sent across a digital network, **the motivation being** to support different data rates and save bandwidth because of voice compression techniques.

e) In Regarding to Claims 7 and 9: Verreault disclosed a system wherein an originating modem terminal equipment connects to an intermediate digital network via an originating modem relay unit and wherein a destination modem terminating equipment connects to the network via a destination modem relay unit (see Fig.4), a method of receiving a modem communication comprising, by the destination modem relay unit:

receiving data from the originating modem terminating equipment (see Fig.4: in which, data is being sent from the Data Device on the left (the originating modem terminating equipment) to the to destination Data Device on the right via modem relay units locate on the left and right of the "data" medium); and

while waiting for data from the originating modem terminating equipment, maintaining communication with the destination modem terminating equipment to prevent protocol timeouts of the destination modem terminating equipment (see col.2 line 63-col.3 line 3: its counterpart modem relay (destination relay unit) in order to

negotiate compatible data transmission conditions; and see col.10 lines 1-9: performs the state sanity timeout verification).

Verreault failed to explicitly disclose the communication network is a digital network as set forth in **Claim 7** and the network is of unknown and unpredictable delay as set forth in **Claim 9**. However, **Verreault** clearly disclosed packets that relate to a data network, in which, packets can be transmitted by a first-side modem relay unit across a data medium to a far-side modem relay unit as shown in Figs.4 and 5. Therefore, **it would be obvious** on the disclosure of **Verreault** related to this subject matter of the instant claims.

Sullivan et al clearly disclosed a network that is used to provide high speed data access using a distributed modem (*see Figs1 and 5: block 20 (local modem), block 40 (distributed modem – the modem relay unit as disclosed by the applicant), and digital data path 16 shown in Fig.1; and block 150 shown in Fig.5 represents for the packet data network as disclosed by the applicant in instant claims because in a data packet network, packets can be experienced many unpredictable problems such as delay, loss or error since connection failures or processing time*).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide such a digital network by replacing the data medium of **Verreault** a digital network as taught by **Sullivan et al**, so that a voice can be converted into digital and then sent across a digital network, **the motivation being** to support different data rates and save bandwidth because of voice compression techniques.

f) **In Regarding to Claim 8:** this claim is rejected for the same reasons as claim 7 because the apparatus in claim 7 can be used to practice the method steps of claim 8.

g) **In Regarding to Claims 10-12:** these claims are rejected for the same reasons as claims 1-3, respectively because the apparatus in claims 1-3 can be used to practice the method steps of claims 10-12.

8. **Claims 4 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Verreault** (US Patent No. **6,434,169**) in view of **Sullivan et al** (US Patent No. **6,667,986**) as applied to claims 1-3 above, and further in view of **Barzegar et al** (US Patent No. **6,347,075**).

a) **In Regarding to Claim 4:** **Verreault** and **Sullivan et al** **disclosed** all aspects of claim 4 as set forth in Claims 1-3.

Both **Verreault** and **Sullivan et al** **failed to explicitly disclose** said means for establishing optimal modulation and rate parameters further includes:

means for independent connection of said first and second modems if no commonly supported data rate is determined.

However, in Fig.3, Verreault disclosed exchange parameter information (means) with terminals 44 and 46 respectively upon detection of a switch from voice to data at either end of the network. For example, when terminal 44 initiates a modem call, relay 40 exchanges parameter information with terminal 44 to ascertain a common set of parameters such as supported data rate, modulator type and encoding. The modem relay 40 also advises modem relay 41 that a data call is being directed to terminal 46.

The modem relay 41 and terminal 46 then exchange parameter information and select a set of conditions supported by both. Upon completion of this exchange, the modem relays 40 and 41 arrive at a set of conditions that can be supported by both modems taking into account the rate employed by the network. Thus, for example, if the terminal 44 can operate at 14.4 kbps but the modem relay 40 only supports 12 kbps, while terminal 46 can operate at 28.8 kbps and the modem relay 41 supports 14.4 kbps, the two modem relays will agree on a rate of 12 kbps. However, if the rate is only 8 kbps, this minimum rate will be indicated by the unit relays 40 and 41 during the exchange for the communications between the terminals 44 and 46 (see col.4 lines 23-45). Hence, the communication connection would be setup independently by modems and terminal in the both sides of communications networks.

Barzegar et al explicitly disclosed such a means (see col.2 lines 44-67: a server called an intelligent services director (ISD) provides multiple independent connections for telephones which ordinarily connect to multiple access virtual circuits generated on the subscriber link over a twisted pair)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide such a means for independent connection of said first and second modems if no commonly supported data rate is determined throughout the parameter information of Verreault as taught by Barzegar et al, so that a data can be transmitted throughout a communication network in different rates without any affections, **the motivation being** to support different data rates and save bandwidth.

b) **In Regarding to Claim 13:** this claim is rejected for the same reasons as claim 4 because the apparatus in claim 4 can be used to practice the method steps of claim 13.

9. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Verreault** (US Patent No. **6,434,169**) in view of **Sullivan et al** (US Patent No. **6,667,986**) as applied to claim 5 above, and further in view of **Beighe et al** (US Patent No. **5,912,896**).

Verreault further disclosed the modem relay unit includes:

a modem driver connected to said digital network and a modem relay protocol unit connected between said modem driver and said modem network driver to maintain state and to format modem data for said digital network (see Fig.5: block of V32 BIS modem relay state machine).

Both **Verreault** and **Sullivan et al** **failed to explicitly disclose** said modem relay unit includes:

a modem network driver connected to set modem.

Beighe et al explicitly disclosed such a modem network driver (see Fig.3: block 70)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide such a modem network driver throughout the data communications network of Verreault, as taught by Beighe et al, so that a data can be stored and forwarded throughout a communication network, **the motivation being** to make Verreault compatible and more efficient.

Allowable Subject Matter

10. **Claims 14-17** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony T Ton whose telephone number is 703-305-8956. The examiner can normally be reached on M-F: 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W Olms can be reached on 703-305-4703. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ATT
4/12/2004


**KENNETH VANDERPUYE
PRIMARY EXAMINER**